UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/776,190	01/24/1997	HANS-PETER JOSEL	P564-7002	1643

7590 02/25/2004

Jeffrey M. Duncan
Brinks Hofer Gilson & lione
P.O. Box 10395
Chicago, IL 60610

EXAMINER	
BAKER, MAURIE GARCIA	

ART UNIT	PAPER NUMBER
1639	

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	08/776,190	JOSEL ET AL.	
	Examiner	Art Unit	
	Maurie G. Baker	1639	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *72-77,81,83-88,100 and 107-115* is/are pending in the application.

4a) Of the above claim(s) *82 and 89* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *72-77,81,83-88,100 and 107-115* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/12/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

2. The Response filed December 12, 2003 is acknowledged. Claims 72-74, 81 and 100 were amended and claims 107-115 were added in this Response. Claims 1-71, 78-80, 90-99 and 101-106 are cancelled. Therefore, claims 72-77, 81-89, 100 and 107-115 are pending.

3. The previous election of species requirement remains in effect. There is currently no allowable generic claim, thus claims 82 and 89 remain withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to non-elected species.

4. Therefore, claims 72-77, 81, 83-88, 100 and 107-115 are examined in this action to the extent of the elected species.

Information Disclosure Statement

5. The examiner thanks applicant for resubmission of the references cited in the Information Disclosure Statement filed August 26, 2002. The initialed PTO-1449 form is attached to this action.

Status of Rejections

6. The enablement rejection under 35 U.S.C. 112, first paragraph is withdrawn in view of applicant's claim amendments. Some of the rejections under 35 U.S.C. 112, second paragraph are also withdrawn in view of applicant's claim amendments; some 35 U.S.C. 112, second paragraph rejections are rewritten and new rejections are also set forth. The previous written description rejection under 35 U.S.C. 112, first paragraph is withdrawn but a new rejection under these grounds is set forth. Art rejections over the Bredehorst and Buchardt references are withdrawn in view of applicant's claim amendments. All other art rejections are maintained. Applicant's arguments presented in the Response filed December 12, 2003 are addressed after each rejection, as pertinent. A new rejection based on the amended claims is set forth starting in paragraph 33.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 72-77, 81, 83-88, 100 and 107-115 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a written description rejection.

To satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. Applicant argues that the "the structure of the claimed conjugates is distinct from the structures that result from a random or statistical arrangement of moieties" (See Response, page 9). However, Applicant's claims are directed to conjugates that define the relationship of the entities therein by functional terminology. The claims use the terminology "predetermined positions" where this is recited to mean that "distances between the hapten molecules and the marker groups or solid phase binding groups are defined thereby". This terminology is relative, broad and completely open-ended. This the examiner's position is that the claimed conjugates are not supported by adequate written description.

There are an unknown number of conjugates that would fall within the claimed genus for the following reasons. The claims contain no specific structural information on the "predetermined positions" where the "distances between the hapten molecules and the marker groups or solid phase binding groups are defined thereby". That is, no information on the actual distances

required is set forth. The entities in question could encompass widely varying structures.

Instant claims 73, 81, 84-88 and 107-115 set forth some structural information on either the hapten or marker group but still do not fully define the structure of the claimed conjugates with respect to the specific relationship of (i.e. distances between) the entities. Also, it is unclear how "non-immunologically reactive" a carrier would have to be in order to be encompassed by the limitation in claim 110 (see further rejections under 35 USC 112, second paragraph below).

The instant specification discloses *only* very specific conjugates containing amino acid carriers with luminescent metal chelate marker groups and small organic molecule haptens that are attached through reactive amino side groups. Applicant's claimed scope represents only an invitation to experiment regarding other possible conjugates containing various distances between the hapten molecules and the marker groups or solid phase binding groups. Thus, the application fails to describe sufficient examples of conjugates that are within the scope of the presently claimed invention. Also see rejections under 35 USC 112, second paragraph below.

With respect to adequate disclosure of the scope of the presently claimed generic applicant is referred to the discussion in *University of California v. Eli Lilly and Co.* (U.S. Court of Appeals Federal Circuit (CAFC) 43 USPQ2d 1398 7/22/1997 Decided July 22, 1997; No. 96-1175) regarding disclosure. For adequate disclosure, like enablement, requires *representative examples* which

provide reasonable assurance to one skilled in the art that the compounds falling within the scope both possess the alleged utility and additionally demonstrate that *applicant had possession of the full scope of the claimed invention.* See *In re Riat* (CCPA 1964) 327 F2d 685, 140 USPQ 471; *In re Barr* (CCPA 1971) 444 F 2d 349, 151 USPQ 724 (for enablement) and *University of California v. Eli Lilly and Co* cited above (for disclosure). The more unpredictable the art the greater the showing required (e.g. by "representative examples") for both enablement and adequate disclosure.

Therefore it is deemed that the disclosure is neither representative of the claimed genus, nor does it represent a substantial portion of the claimed genus. Moreover, the claimed genus encompasses members which are yet to be prepared or envisioned. This further evidences that the structural features of the exemplified conjugates do not constitute support for the claimed genus or a substantial portion thereof.

Response to Arguments

9. Applicant's arguments filed December 12, 2003 (Paper No. 32) have been fully considered but are not found persuasive. The arguments are moot in view of the new rejection (i.e. new rationale for rejection) set forth above.

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 72-77, 81, 83-88, 100 and 107-115 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claims 72, 100 and claims dependent thereon recite "predetermined positions on the polymeric carrier, such that distances between the hapten molecules and the marker groups or solid phase binding groups are defined thereby". This is deemed to be relative terminology and is also confusing which renders the claims indefinite. The "distances ... defined thereby" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Note that ***any*** incorporation of entities onto a carrier would produce a distance between them. It is simply unclear what is meant by this newly added limitation.

B. Newly added claim 110 recites "non-immunologically reactive". This is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a clear standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. That is, "non-immunologically reactive" under what conditions (in what assay)? A conjugate may be "immunologically reactive" in one assay and "non-immunologically reactive" in another. It is noted that the instant specification discusses the term "non-immunologically reactive" on page 16 (1st paragraph)

but this discussion is completely open ended. For example, the specification states that a "non-immunologically reactive" amino acid sequence is one that "does not interfere with the test procedure in the intended application".

C. Claim 87 is indefinite because it recites that the haptens are "pharmacologically active substances". The term "pharmacologically active" is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. That is, how "active" must a "substance" be in order to meet the limitations of this claim? What is the structure of such "substances"?

Response to Arguments

12. Applicant's arguments filed December 12, 2003 (Paper No. 32) have been fully considered but are not found fully persuasive. Some rejections have been withdrawn; however, the following is noted, as pertinent to the maintained rejections.

13. Applicants argue that each of the phrases rejected in parts B. and C. above would be well understood by one of ordinary skill in the art (Response, page 13). The examiner respectfully disagrees. The examiner maintains that the phrases in parts B. and C. above are relative terms which renders the claims indefinite. Applicant points to various portions of the specification and to a cited reference text for support but this is not

deemed to provide an adequate standard for ascertaining the requisite degree for this relative terminology.

14. Applicant is directed to MPEP 2173.05(a): [t]he meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed. Although applicant points to the specification and art and states that one of ordinary skill would understand these terms, the examiner disagrees. There is simply not enough information present to make the meaning of the terms readily apparent.

15. Also note the following from MPEP 2173.02: If the scope of the invention sought to be patented cannot be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. 112, second paragraph is appropriate. *In re Wiggins*, 488 F.2d 538, 179 USPQ 421 (CCPA 1973).

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

17. Claims 72, 74, 75, 86-88, 100, 107, 110 and 111 are rejected under 35 U.S.C. 102(b) as being anticipated by Tam (US 5,229,490).

Tam discloses a "multiple antigen peptide" system where "a large number of antigens are bound to the functional groups of a dendritic core molecule" (see Abstract). These "multiple antigen peptide" systems read on the claimed conjugates as described below.

The "polymeric carrier" in Tam consists of a dendritic core molecule, which in Figure 1 is shown as consisting of 8 amino acid residues; this reads on the limitations of claims 74 and 75 where the monomers are amino acids and the carrier has 8 monomeric units. Eight peptide antigens (i.e. hapten) moieties are attached to the dendritic core molecule of Tam. The haptens are attached to reactive amino groups (Lys) of the carrier (see column 5, line 33-53), which reads on the limitations of claims 107 and 111.

Applicant's recited definition of hapten (see instant specification page 8) encompasses any molecule that is a "pharmacological active substance". The peptide antigens of Tam are known to be "pharmacologically active substances" (claim 87) and have molecular weights of greater than 100 (claim 86). The peptide antigens of Tam specifically read on the exact same "immunogenically reactive peptide epitope" haptens claimed in the instant claim 88. See discussion of peptide antigens found in Tam column 5, line 64 through column 7, line 64, especially the antigens set forth in Table 1).

The conjugates of Tam are made on a solid support via coupling at one

end of the molecule (at the –OH moiety of the 1st amino acid of the carrier) and thus have a "solid phase binding group" of -OH; see solid phase synthesis described in Example 2 of the reference. Thus the conjugate of Tam in Figure 1 has 8 "haptens" (peptide antigens) and one "solid phase binding group" (-OH); this reads on the limitations of claim 100 with respect to numbers of entities.

With respect to the limitation that the amino acid carrier of the claimed conjugates is "non-immunologically reactive", Tam disclose that their dendritic core molecule (i.e. the carrier) clearly is not antigenic thus is "non-immunologically reactive" (see, for example, column 3, lines 31-48 of the reference). Note that the instant specification states on page 16 (1st paragraph) that a "non-immunologically reactive" amino acid sequence is one that "does not interfere with the test procedure in the intended application". The carrier of Tam clearly meets this limitation for their intended application (see Examples 13 & 14 of the reference).

Response to Arguments

18. Applicant's arguments filed December 12, 2003 have been fully considered but are not found persuasive. The examiner's rationale is set forth below.

19. Applicants set forth introductory statements to their arguments on page 9 of the Response. Applicants state that "the claimed invention is directed to conjugates containing carriers in which hapten molecules and marker groups or solid phase binding groups are

incorporated at specific predetermined positions, such that distances between the hapten molecules and the marker groups or solid phase binding groups are defined thereby". Applicant then states that the structure of the claimed conjugates is distinct from the structures that result from a random or statistical attachment of moieties. However, the examiner's position is that this distinction is ***not*** apparent in the language added to the claim. ***Any*** incorporation of entities onto a carrier would produce a distance between them. It is simply unclear what is meant by this newly added limitation. Se rejection under the second paragraph of 35 U.S.C. 112 set forth above.

20. Also, in response to these arguments, it is noted that the features upon which applicant relies (i.e., "distances ... defined thereby") are not recited in the rejected claim(s). The instant claims do not contain reference to any ***specific*** distance. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Moreover, it is the examiner's position that some, if not all, of this terminology is relative (see paragraph 11 above).

21. Applicants argue that Tam does not teach or suggest a conjugate having hapten molecules and marker groups coupled to reactive side groups at "predetermined positions" (Response, page 15). As stated in the written description rejection above, the term "predetermined positions" is *not adequately described* in the instant specification. Moreover, as the sequence and structure of the conjugate of Tam is *known* (e.g. Figure 1 of the

reference), this would read on groups "coupled to reactive side groups at predetermined positions".

22. Applicants also argue that the conjugates of Tam would result in binding of the carrier to a solid phase in random positions, as opposed to predetermined (Response, page 16). In response to these arguments, it is noted that the features upon which applicant relies (i.e. controlled incorporation) are not recited in the rejected claim(s). Applicant argues that the recitation of "predetermined positions on the polymeric carrier, such that distances between the hapten molecules and the marker groups or solid phase binding groups are defined thereby" does incorporates such a feature into the claims; however, the examiner respectfully disagrees as this terminology is unclear. Additionally, as the sequence and structure of the conjugate of Tam is ***known*** (e.g. Figure 1 of the reference), these arguments are moot for this reason as well.

23. Claims 72, 74-76, 86-88, 100, 107, 110 and 111 are rejected under 35 U.S.C. 102(e) as being anticipated by Rose et al (US 6,001,364).

Rose et al disclose compositions of matter comprising "baseplates having a plurality of oxime forming complementary reactive groups" that are attached to "reactive molecules" (see Abstract). The multivalent molecules of Rose et al (see column 7, lines 16-22) read on the claimed conjugates as described below.

The "polymeric carrier" in Rose et al consists of their "baseplate" molecule (see column 7, lines 26-37) which in Figure 1 is shown as consisting of

9 amino acid residues; this reads on the limitations of claims 74 and 75 where the monomers are amino acids and the carrier has 9 monomeric units. Six peptide antigens (i.e. hapten) moieties are attached to the "baseplate" molecule of Rose et al in Figure 1, reading on the limitations of claim 76. The haptens are attached to reactive amino groups (Lys and amine terminus) of the carrier (see column 3, lines 63-65 and column 10, lines 30-44), which reads on the limitations of claims 107 and 111.

Applicant's recited definition of hapten (see instant specification page 8) encompasses any molecule that is a "pharmacological active substance". The peptide active molecules of Rose et al (denoted COSMs) are known to be "pharmacologically active substances" (claim 87) and have molecular weights of greater than 100 (claim 86). The COSMs of Rose et al specifically read on the exact same "immunogenically reactive peptide epitope" haptens claimed in the instant claim 88. See discussion of peptide COSMs found in Rose et al column 5, line 60 through column 6, line 17. See also Example II which describes the synthesis and origin of the various peptide COSMs.

The conjugates of Rose et al are made on a solid support via coupling at one end of the molecule (at the –OH moiety of the 1st amino acid of the baseplate) and thus have a "solid phase binding group" of -OH; see solid phase synthesis of the baseplate described in Example I of the reference. Thus the conjugate of Rose et al in Figure 1 has a peptide "baseplate" of sequence GGGKKKKKG; 6 "haptens" (peptide COSMs of sequence KLEEQRPERVKG) and one "solid

phase binding group" (-OH); this reads on the limitations of claim 100 with respect to numbers of entities. Moreover, Rose et al teach a conjugate containing a biotin group which would also read on the claimed "solid phase binding group", see Example VIII in column 22 of the reference. Rose also teaches conjugates attached to a solid surface via thiol chemistry, see Example VIII in column 22-23.

With respect to the limitation that the amino acid carrier of the claimed conjugates is "non-immunologically reactive", Rose et al disclose that their "baseplate" (i.e. the carrier) clearly is not antigenic thus is "non-immunologically reactive" (see, for example, column 14, lines 7-26 of the reference). Note that the instant specification states on page 16 (1st paragraph) that a "non-immunologically reactive" amino acid sequence is one that "does not interfere with the test procedure in the intended application". The carrier of Rose et al clearly meets this limitation for their intended applications (see column 15, line 62 through column 16, line 22 and Example VII).

Response to Arguments

24. Applicant's arguments filed December 12, 2003 have been fully considered but are not found persuasive. The examiner's rationale is set forth below.

25. The same arguments apply for the Rose reference as for the Tam reference. Thus, see paragraphs 19-22 above.

Claim Rejections - 35 USC § 103

26. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

27. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

28. Claims 72, 74, 75, 81, 86-88, 100 and 107-111 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tam (US 5,229,490).

The teachings of Tam are set forth supra. The reference lacks the specific exemplification of using "artificial" amino acids, specifically β-alanine, in the polymeric carrier (instant claims 108 and 109). The reference also lacks the specific exemplification of using a labeling group (i.e. the instant "marker groups" of claim 81).

However, the reference sets forth in column 5, lines 27-32 that the use of additional residues in extending the dendritic core molecule ("polymeric carrier") for peptide antigens of short chain length (6-14 residues) is preferred. The reference specifically sets forth β-alanine for such a purpose (column 5, line 30).

Also, Tam teaches that in using their conjugates for testing that "the diagnostic moiety joined to the dendritic polymer may be labeled with a detectable label" (column 10, lines 44-55). The reference sets forth fluorescent labels as a "useful" type of such groups (column 10, lines 48-50).

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to use β-alanine as a part of the dendritic core molecule ("polymeric carrier") of Tam and/or use a detectable fluorescent label as the reference describes these modifications specifically. One of ordinary skill would have been motivated to use β-alanine in the carrier when the peptide antigen of interest is of short chain length (6-14 residues) as set forth by Tam. One of ordinary skill would have been motivated to use a detectable fluorescent label when necessary for the test of interest as set forth by Tam (see column 10, lines 40-55). One of ordinary skill would also have had a reasonable expectation of success based on the fact that the synthesis of the polymeric carriers of Tam are carried out using standard techniques thus were well known and routine in the art at the time of filing (see Example 1 of the reference). Methods of labeling are also well known, as taught by Tam (column 10, lines 54-55).

Response to Arguments

29. Applicant's arguments filed December 12, 2003 have been fully considered but are not found persuasive. The examiner's rationale is set forth in paragraph 32 below.

30. Claims 72-76, 81, 86-88, 100 and 107-111are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose et al (US 6,001,364).

The teachings of Rose et al are set forth supra. The reference lacks the specific exemplification of using "artificial" amino acids in the polymeric carrier (instant claims 108 and 109). The reference also lacks the specific exemplification of using a labeling group, specifically metal chelates (i.e. the instant "marker groups" of claim 73 & 81).

However, the reference sets forth in column 7, line 23 through column 8, line 2 that the use of "artificial" amino acid residues in the baseplate molecule (i.e. "polymeric carrier") is preferred. The reference specifically sets forth using β-amino acids for such a purpose (column 7, line 37-41 & column 7, line 66 through column 8, line 2).

Also, Rose et al teaches that in their conjugates can comprise metal chelates as they are also considered to be haptens (see column 6, lines 13-17; column 12, line 62 through column 13, line 13 & column 14, lines 12-26) and/or can be a part of the complementarity determining region of an antibody (see column 14, lines 39-46). The reference also teach polyoxime conjugates containing "signal producing groups" (see Example VIII in column 22) and the

use of "reporter groups" (column 13, lines 46-64) all reading in the instant "marker groups".

Therefore, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to use β-amino acids as a part of the basplate ("polymeric carrier") of Rose et al and/or use a detectable signal or reporter groups that are metal chelates as the reference describes these modifications specifically. One of ordinary skill would have been motivated to use β-amino acids in the carrier as these are preferred residues as set forth by Rose (column 7, line 66 through column 8, line 2). One of ordinary skill would have been motivated to use a detectable signal or reporter groups that are metal chelates when necessary for the test of interest as set forth by Rose (see column 13, lines 53-65 & column 14, lines 42-46). One of ordinary skill would also have had a reasonable expectation of success based on the fact that the synthesis of the polymeric carriers of Rose are carried out using standard techniques thus were well known and routine in the art at the time of filing (see Example 1 of the reference). Methods of labeling are also well known, as taught by Rose (column 14, lines 21-23 & 42-50).

Response to Arguments

31. Applicant's arguments filed December 12, 2003 have been fully considered but are not found persuasive. The examiner's rationale is set forth below.

32. Applicant argues that because Tam and Rose do not disclose the invention as argued for the rejections under 35 USC 102, the rejections under 35 USC 103 based on these references are also improper. The examiner respectfully disagrees. As the examiner's position is that each of the Tam and Rose references *does* disclose the claimed invention (see Response to Arguments sections for each rejection), each of the rejections under 35 USC 103 is maintained.

NEW REJECTION

Claim Rejections - 35 USC § 112

33. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

34. Claims 72-77, 81, 83-88, 100 and 107-115 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

The specification as originally filed does not provide support for the invention as now claimed. Applicant's amendment, filed December 12, 2003, asserts that no new matter has been added, and points to portions of the instant

specification for support of the claim amendments. Some of the amendments are indeed adequately supported; however, **two** portions of the amendments do not find support in the specification as originally filed.

Specifically, **(1)** the recitation of conjugates comprising a carrier comprising "a minimum of 5 and a maximum of 100 monomeric units" (this new range is not specifically supported) and **(2)** the recitation of the language "and a combination thereof" in claims 72, 81, 100 and 112-115. In accordance with MPEP § 714.02, applicants **should specifically point out support** for any amendments made to the disclosure.

Status of Claims/Conclusion

35. No claims are allowed.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurie Garcia Baker, Ph.D. whose telephone number is (571) 272-0805. The examiner is on an increased flextime schedule; the best time to contact the examiner is Monday-Friday from 6:00-10:00 a.m.

37. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang, can be reached at (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Maurie Garcia Baker, Ph.D.
February 20, 2004

MAURIE GARCIA BAKER PH.D
PRIMARY EXAMINER